

WHAT IS CLAIMED IS:

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Sub A

1. An electronic instrument comprising:
a memory device; and
strobe signal lines through which a first
output strobe signal and a second output strobe
signal are transmitted in synchronism with output
data from said memory device in the data output
operation, the first and second output strobe
signals being in complementary relation to each
other.

2. The electronic instrument as claimed
in claim 1, wherein said memory device has a strobe
output buffer that generates the first and second
output strobe signals based on a predetermined
signal, the first and second output strobe signals
being supplied from said strobe output buffer to
said strobe signal lines when the output data is
output from said memory device.

3. The electronic instrument as claimed
in claim 1, wherein the first and second output
strobe signals have different levels in a preamble
time which is a time period before a head of a cross
point train of the first and second output strobe
signals, the head of the cross point corresponding
to a start of a strobe period of the first and

second output strobe signals.

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4. The electronic instrument as claimed in claim 3, wherein the first and second output strobe signals have different levels in a postamble time which is a time period after a cross point of the first and second output strobe signals which cross point corresponds to an end of a strobe period of the first and second output strobe signals.

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5. The electronic instrument as claimed in claim 3, wherein the levels of the first and second output strobe signals in the preamble time are set by use of a read command as a trigger.

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6. The electronic instrument as claimed in claim 3, wherein the levels of the first and second output strobe signals in the preamble time are set a predetermined time before a first output data item is output.

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7. The electronic instrument as claimed in claim 6, wherein transistors of said memory device which transistors drive the strobe signal lines are controlled to be in a off state in a

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8 11. The electronic instrument as claimed
in claim 10, wherein said memory device has a strobe

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10 16. The electronic instrument as claimed
in claim ¹⁴~~13~~, wherein transistors of a unit supplying
the input data to said memory device which
transistors drive the strobe signal lines are
controlled to be in a off state in a waiting time
15 period.

20 17. The electronic instrument as claimed in claim 10, wherein each of cross points of the first and second input strobe signals is set at an edge trigger point of a corresponding one of input data items.

30 18. The electronic instrument as claimed
in claim 10, wherein each of cross points of the
first and second input strobe signals is set at a
center point of a corresponding one of input data
items.

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Sub A 3
5 19. An electronic instrument comprising:
a memory device; and
strobe signal lines through which a first
output strobe signal and a second output strobe
10 signal are transmitted in synchronism with out put
data from said memory device in a data output
operation and a first input strobe signal and a
second input strobe signal are transmitted in
synchronism with input data supplied to said memory
15 device in a data input operation, the first and
second output strobe signals being in complementary
relation to each other, the first and second input
strobe signals being in complementary relation to
each other.

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20 20. The electronic instrument as claimed
in claim 19, said memory device comprises:
a strobe output buffer that generates the
first and second output strobe signals based on a
predetermined signal, the first and second output
25 strobe signals being supplied from said strobe
output buffer to said strobe signal lines when the
output data is output from said memory device; and
a strobe input buffer that receives the
first and second input strobe signals transmitted
through said strobe signal lines and generates,
30 based on the first and second input strobe signals,
a strobe clock signal used to settle input data
items supplied to said memory device.

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21. The electronic instrument as claimed

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in claim ¹⁵~~19~~, wherein the first and second output
strobe signals have different levels in a first
preamble time which is a time period before a head
of a cross point train of the first and second
5 output strobe signals, the head of the cross point
corresponding to a start of a strobe period of the
first and second output strobe signals, and wherein
the first and second input strobe signals have
different levels in a second preamble time which is
10 a time period before a head of a cross point train
of the first and second input strobe signals, the
head of the cross point corresponding to a start of
a strobe period of the first and second input strobe
signals.

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^{17 18}~~21 22~~. The electronic instrument as claimed
20 in claim ~~21~~, wherein the first and second output
strobe signals have different levels in a first
postamble time which is a time period after a cross
point of the first and second output strobe signals
which cross point corresponds to an end of a strobe
25 period of the first and second output strobe signals,
and wherein the first and second input strobe
signals have different levels in a second postamble
time which is a time period after a cross point of
the first and second input strobe signals which
30 cross point corresponds to an end of a strobe period
of the first and second input strobe signals.

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¹⁹~~18 23~~. The electronic instrument as claimed
in claim ~~22~~, wherein said strobe signal lines

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includes output strobe signal lines through which
the first and second output strobe signals and input
strobe signal lines through which the first and
second input strobe signal lines, said output strobe
5 signal lines and said input strobe signal lines
being separated from each other, wherein when an
even number of consecutive output data items are
output, the levels of the first and second output
strobe signals are controlled in a waiting time
10 period to be maintained at the same levels as in the
first postamble time, and wherein when an even
number of consecutive input data items are supplied,
the levels of the first and second input strobe
signals are controlled in a waiting time period to
15 be maintained at the same levels as in the second
postamble time.

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~~18-24~~. The electronic instrument as claimed
in claim ²⁰~~22~~, wherein said strobe signal lines
includes output strobe signal lines through which
the first and second output strobe signals and input
25 strobe signal lines through which the first and
second input strobe signal lines, said output strobe
signal lines and said input strobe signal lines
being separated from each other, wherein when an odd
number of consecutive data output items are output,
30 the levels of the first and second output strove
signals are controlled in a waiting time period to
be maintained at the same levels as in the first
postamble time and then restored at the start of the
second preamble time in the next data read operation.

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[illegible]

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26. A semiconductor memory device provided in an electronic instrument having clock lines through which complementary clock signals are transmitted to be used for synchronization of a data input operation for said semiconductor memory device, and strobe signal lines through which a first input strobe signal and a second input strobe signal are transmitted to be used to settle input data supplied to said semiconductor memory device in the data input operation, the first and second input strobe signals being in complementary relation to each other, said semiconductor memory device comprising:

a data output buffer that outputs the output data from a memory bank;

a strobe output buffer that generates the first and second output strobe signals based on a predetermined signal, the first and second output strobe signals being supplied from said strobe

output buffer to said strobe signal lines when the output data is output from said data output buffer;

5 a strobe input buffer that receives the first and second input strobe signals transmitted through said strobe signal lines and generates a strobe clock signal based on the first and second input strobe signals; and

10 a data input buffer that receives input data items supplied to said semiconductor memory device, the input data items being settled by using the clock strobe signal generated by said input strobe buffer.

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